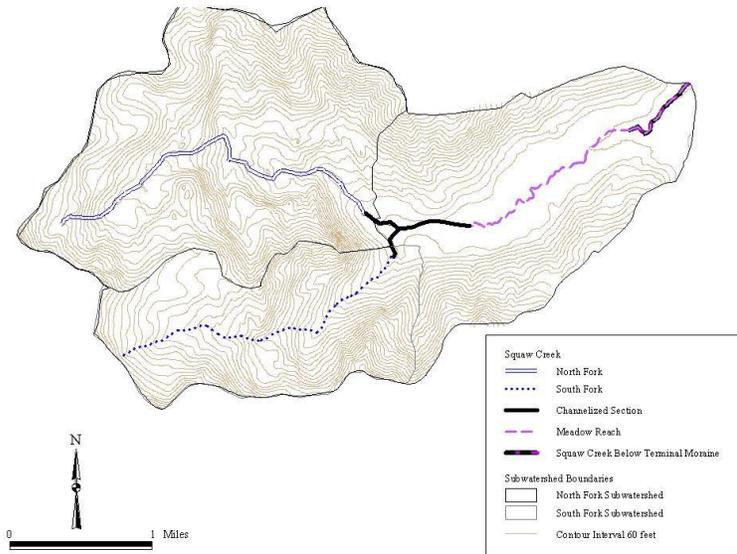


Waterbody:
Squaw Creek

TMDL: **Sediment**

Updated:
Jorge Orozco
7/29/2013

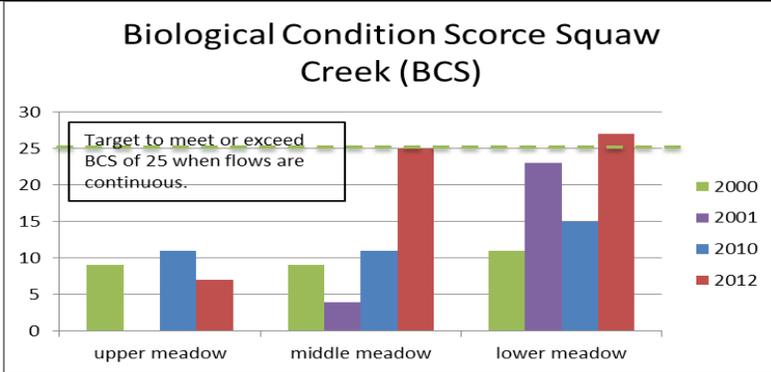
Map



Background Information:

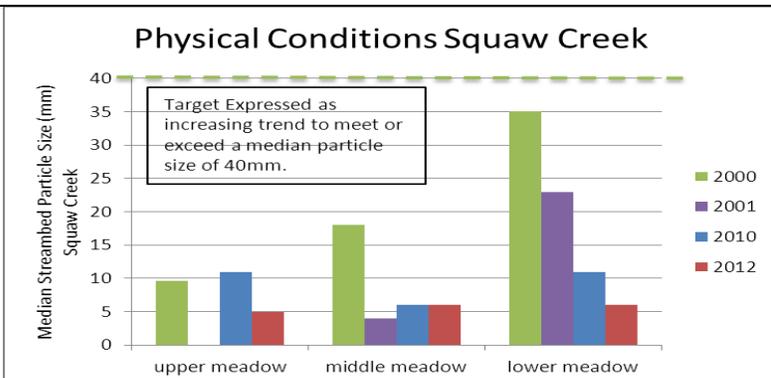
- *Date of approval: April 2006 (Lahontan Region); July 27, 2007, (USEPA)*
- *Basis for TMDL: Bioassessment studies conducted in 2000 and 2001 by researchers from UC Santa Barbara Sierra Nevada Aquatic Research Center demonstrated degraded benthic aquatic invertebrate communities and physical channel conditions in Squaw Creek. Accelerated hill slope erosion from land disturbance related to development, stream channel erosion, road sanding operations, and naturally occurring erosion contribute to sediment loading to the creek.*
- *Responsible parties: Squaw Valley Ski Corporation, Resort at Squaw Creek, Village at Squaw Valley, and Placer County.*
- *Target: The TMDL will be met when the rolling average for three consecutive 3-event datasets meets or exceeds the biologic condition numeric target of 25.*
- *Attainment of TMDL: Estimated time Frame for meeting the numeric target and achieving the TMDL is 20 years*

Figure of current data from



Permits that include TMDL implementation measures: Amended MRP No. 93-25-A2 for Squaw Valley Ski Area, Amended MRP No. 2003-0002A1 for Village at Squaw Valley, Small MS4 permit 2013-0001-DWQ for Placer County, Updated WDR MRP No. R6T-2009-0024

Figure 1



Period of evaluation: 2010-2012
In 2011, the flows were high due to a large snow year so Rapid Assessment Methodologies (RAM) and bioassessment data were not collected. Monitoring for TMDL parameters are planned to occur in 2012 and every even year thereafter.

Figure 2

¹ Squaw Creek Sediment TMDL numeric targets use three established sampling sites (upper, middle, and lower) on the meadow reach of Squaw Creek.

Indicator	Target ¹	Evaluation Schedule		Responsible Party	Source Reported	Compliance Comments
Biologic Health (Herbst 2002 protocol)	Biologic condition score (BCS) of 25 or more when flows are continuous	Sampling conducted once every two years between the months of July and September	Assessed using 3-(sampling) event rolling average datasets	Squaw Valley Ski Corp, Squaw Valley Neighborhood Company, Squaw Creek Associates (regulated through individual WDRs), and Placer County (regulated through MS4).	Placer County/ Town of Truckee, Truckee River Water Quality Monitoring Report	BCS has shown improvement from 2010 to 2012 but still has not met the TMDL BCS target of 25 when flows are continuous. (Refer to Figure 1)
Physical Habitat (Herbst 2002 protocol)	Increasing trend in D-50 (median particle size) value approaching 40 mm or greater		Trend Assessment after three consecutive sampling events are completed	Squaw Valley Ski Corp, Squaw Valley Neighborhood Company, Squaw Creek Associates (regulated through individual WDRs), and Placer County (regulated through MS4).)	Placer County/ Town of Truckee, Truckee River Water Quality Monitoring Report	Median particle size showed a decrease in size, moving in the opposite direction of the TMDL target of 40mm or greater. (refer to Figure 2)
	Decreasing trend in percent fines and sand approaching 25% cover of the stream bottom or less			Squaw Valley Ski Corp, Squaw Valley Neighborhood Company, Squaw Creek Associates (regulated through individual WDRs), and Placer County (regulated through MS4).	Placer County/ Town of Truckee, Truckee River Water Quality Monitoring Report	Shows an increasing trend in percent fines and sands covering the bottom of the stream bed. (refer to Figure 3)

Monitoring Parameter	Responsible Monitoring Party	Monitoring Schedule	Compliance Comments/BMP projects	
<p>Compliance with all erosion and sedimentation control permit requirements, including BMP installation and maintenance focusing on source control, general requirements and prohibitions, monitoring, and reporting</p>	<p>Water Board staff</p>	<p>Assess permit compliance related to erosion and sedimentation control quarterly using Water Board's permit tracking database currently in place.</p>	<p>Squaw Valley Ski Area</p>	<p>Facility is in compliance. The area is much more vegetated than in years past. All of the sediment controls that have been constructed contain the heavier sediments during major storm events. Mitigated wetland areas have also continued to flourish.</p>
			<p>Village at Squaw</p>	<p>Not in compliance due to a 10% increase in turbidity from natural levels which correlates directly with sediment (4/20/2010), and exceeded the TDS limit of 85mg/L (12/04/2007).</p>
			<p>Resort at Squaw</p>	<p>Facility is in compliance.</p>
			<p>Placer County</p>	<p>Placer County is coordinating with the Town of Truckee on the Truckee River Water Quality Monitoring Plan (TRWQMP) to monitor Squaw Creek watershed including the Bio assessment.</p>
<p>Facilities inspections to ensure permit compliance</p>	<p>Water Board staff</p>	<p>Water Board staff to inspect all facilities twice annually</p>	<p>Squaw Valley Ski Area</p>	<p>Facilities have been inspected but not twice annually.</p>
			<p>Village at Squaw</p>	<p>Facilities have been inspected but not twice annually.</p>
			<p>Resort at Squaw Creek</p>	<p>Facilities have been inspected but not twice annually.</p>
			<p>Placer County</p>	<p>Water Board staff participates as part of an advisory committee to deal with small municipal separate storm sewer systems (MS4) and help evaluate new storm water projects.</p>
<p>TMDL data review and assessment</p>	<p>Water Board staff</p>	<p>As needed in accordance with numeric targets</p>	<p>All information that is reported by permit holders is reviewed and evaluated by Water Board. Implementation requirements satisfy the requirements for tracking TMDL implementation.</p>	

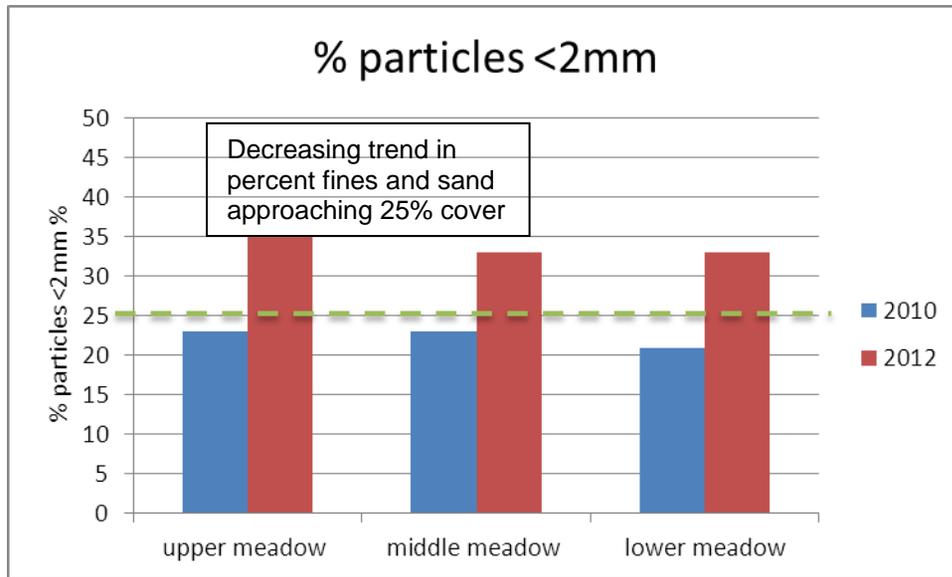


Figure 3